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EXAMINER

REIDEL, JESSICA L

ART UNIT PAPER NUMBER

3766

DATE MAILED: 07/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

e

Office Action Summary

Application No.

10/660,283

Applicant(s)

BALL ET AL.

Examiner

Jessica L. Reidel

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 February 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims.

Therefore, the “transducer comprising a magnet and a coil disposed within and attached to a housing” must be shown or the feature(s) canceled from the claim(s).

In addition, the “battery”, the “battery disposed within and attached to a battery housing where leads extend from the battery to a position outside of the battery housing” and the “means to signal low charge state of the battery” and/or “an external charge unit comprising a battery status indicator for detecting the charge state of the battery” must be shown or the feature(s) canceled from the claim(s).

The “amplifier”, “telemetry block”, “communications block”, “dual coil”, “at least two resonant coils” and the “magnet to facilitate alignment of the at least two resonant coils” must be shown or the feature(s) canceled from the claim(s). Also, the “microphone”, the “microphone disposed within and attached to a microphone housing, wherein leads extend from the microphone to a position outside the microphone housing” and “a protective cover attached to a microphone” must be shown or the feature(s) canceled from the claim(s).

No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing

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should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the Examiner, the Applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The abstract of the disclosure is objected to because of its language use. Applicant is reminded of the proper language and format for an abstract of the disclosure. The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," "The present invention" etc. Correction is required. See MPEP § 608.01(b).

3. The disclosure is objected to because of the following informalities: there appears to be an error at page 8, lines 3-11. Specifically, the Examiner suggests directing the reader to Figs. 1A and 1B when referring to the individual with residual hearing in the low frequency range and directing the reader to Figs. 2A and 2B when referring to the individual with residual hearing in the high frequency range. Currently, attention is only brought to Figs. 1A and 1B for both individuals and this seems to be incorrect. Appropriate correction is required.

Content of Specification

- (a) Title of the Invention: See 37 CFR 1.72(a) and MPEP § 606. The title of the invention should be placed at the top of the first page of the specification unless the title is provided in an application data sheet. The title of the invention should be brief but technically accurate and descriptive, preferably from two to seven words may not contain more than 500 characters.
- (b) Cross-References to Related Applications: See 37 CFR 1.78 and MPEP § 201.11.
- (c) Statement Regarding Federally Sponsored Research and Development: See MPEP § 310.
- (d) The Names Of The Parties To A Joint Research Agreement: See 37 CFR 1.71(g).
- (e) Incorporation-By-Reference Of Material Submitted On a Compact Disc: The specification is required to include an incorporation-by-reference of electronic documents that are to become part of the permanent United States Patent and Trademark Office records in the file of a patent application. See 37 CFR 1.52(e) and MPEP § 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text were permitted as electronic documents on compact discs beginning on September 8, 2000.

Or alternatively, Reference to a "Microfiche Appendix": See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.
- (f) Background of the Invention: See MPEP § 608.01(c). The specification should set forth the Background of the Invention in two parts:
 - (1) Field of the Invention: A statement of the field of art to which the invention pertains. This statement may include a paraphrasing of the applicable U.S. patent classification definitions of the subject matter of the claimed invention. This item may also be titled "Technical Field."
 - (2) Description of the Related Art including information disclosed under 37 CFR 1.97 and 37 CFR 1.98: A description of the related art known to the applicant and including, if applicable, references to specific related art and problems involved in the prior art which are solved by the applicant's invention. This item may also be titled "Background Art."
- (g) Brief Summary of the Invention: See MPEP § 608.01(d). A brief summary or general statement of the invention as set forth in 37 CFR 1.73. The summary is separate and distinct from the abstract and is directed toward the invention rather

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than the disclosure as a whole. The summary may point out the advantages of the invention or how it solves problems previously existent in the prior art (and preferably indicated in the Background of the Invention). In chemical cases it should point out in general terms the utility of the invention. If possible, the nature and gist of the invention or the inventive concept should be set forth. Objects of the invention should be treated briefly and only to the extent that they contribute to an understanding of the invention.

- (h) Brief Description of the Several Views of the Drawing(s): See MPEP § 608.01(f). A reference to and brief description of the drawing(s) as set forth in 37 CFR 1.74.
- (i) Detailed Description of the Invention: See MPEP § 608.01(g). A description of the preferred embodiment(s) of the invention as required in 37 CFR 1.71. The description should be as short and specific as is necessary to describe the invention adequately and accurately. Where elements or groups of elements, compounds, and processes, which are conventional and generally widely known in the field of the invention described and their exact nature or type is not necessary for an understanding and use of the invention by a person skilled in the art, they should not be described in detail. However, where particularly complicated subject matter is involved or where the elements, compounds, or processes may not be commonly or widely known in the field, the specification should refer to another patent or readily available publication which adequately describes the subject matter.
- (j) Claim or Claims: See 37 CFR 1.75 and MPEP § 608.01(m). The claim or claims must commence on separate sheet or electronic page (37 CFR 1.52(b)(3)). Where a claim sets forth a plurality of elements or steps, each element or step of the claim should be separated by a line indentation. There may be plural indentations to further segregate subcombinations or related steps. See 37 CFR 1.75 and MPEP § 608.01(i)-(p).
- (k) Abstract of the Disclosure: See MPEP § 608.01(f). A brief narrative of the disclosure as a whole in a single paragraph of 150 words or less commencing on a separate sheet following the claims. In an international application which has entered the national stage (37 CFR 1.491(b)), the applicant need not submit an abstract commencing on a separate sheet if an abstract was published with the international application under PCT Article 21. The abstract that appears on the cover page of the pamphlet published by the International Bureau (IB) of the World Intellectual Property Organization (WIPO) is the abstract that will be used by the USPTO. See MPEP § 1893.03(e).
- (l) Sequence Listing. See 37 CFR 1.821-1.825 and MPEP §§ 2421-2431. The requirement for a sequence listing applies to all sequences disclosed in a given application, whether the sequences are claimed or not. See MPEP § 2421.02.

Claim Objections

4. Claim 30 is objected to because of the following informalities: the phrase “power supply” lacks antecedent basis. The Examiner suggests changing “power supply” to “battery” as provided by Claim 11. Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 20-29 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Specifically it is unclear as to what are the differences between a “dual coil” and “at least two resonant coils”. In addition, it is unclear as to whether the “telemetry block” is implanted and the “communications block” is external, or vice-versa or even if the two blocks are both implanted or both external. In addition it is not described in the specification as to how the alternating current is being transmitted between the “blocks” in a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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8. Claims 20-29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

9. Claim 20 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: the location of the “telemetry block” in relation to the location of the “communications block” and how telemetry occurs between the two “blocks”.

Claim Rejections - 35 USC § 102

10. In view of the Claim Objections above and further in view of the 35 U.S.C. 112, first and second paragraph rejections above, the following rejections are based on prior art which can be applied to the claims as to the best understanding of the Examiner.

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

12. Claims 11, 15 and 20-21 are rejected under 35 U.S.C. 102(e) as being anticipated by Leysieffer (U.S. 6,697,674) (herein Leysieffer ‘674). As to Claim 11, Leysieffer ‘674 discloses a device for improving hearing in subject comprising a microphone 20, a battery 25, electronics module 34, at least one mechanical transducer 14 suitable for transmission of a mechanical signal to a structure of a subject’s middle ear and an intracochlear stimulation electrode array 10

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having several stimulation electrodes, read as several electrical transducers 11 suitable for transmission of an electrical signal to a structure of a subject's inner ear (see Leysieffer '674 Abstract, Figs. 1-7, column 1, lines 5-21, column 5, lines 36-67 and column 6, lines 1-47).

13. As to Claim 14, Leysieffer '674 discloses that the microphone 20 may be provided with a microphone capsule hermetically sealed on all sides, read as a protective cover (see Leysieffer '674 column 13, lines 30-50).

14. As to Claim 15, Leysieffer '674 discloses that the device further comprises an amplifier within modules 41 (see Leysieffer '674 Fig. 2 and column 14, lines 14-23).

15. As to Claims 20-21, Leysieffer '674 discloses that the electronics module 34 comprises a bi-directional telemetry system, read as a bi-directional telemetry block 46 and a bi-directional data bus 45, read as a communications block 45 (see Leysieffer '674 Fig. 2 and column 15, lines 8-21).

16. As to Claim 22-29, as to the best understanding of the Examiner, it is inherent that the telemetry block and communications block of Leysieffer '674 comprises a dual coil and/or at least two resonant coils where an alternating amplitude modulated current signal in the audio frequency band is transmitted between dual coil and/or the two resonant coils.

17. Claims 16, 19, 30 and 32 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Leysieffer '674. As to Claim 16, it is inherent, or at least obvious to one having ordinary skill in the art that the power supply/battery 25 is disposed within and attached to a battery housing otherwise the battery would leak and would be unstable and free to move around and collide with its housing compromising the workability of the device. It is also inherent, or at least obvious to one having ordinary skill in

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the art that the power supply/battery 25 has lead extending away from the battery to a position outside of the battery housing in order to provide power to the microphone 20, the signal processor 62, and the other components of the device for improving hearing in a subject depicted in Leysieffer '674 Fig. 7.

18. As to Claim 19, Leysieffer '674 discloses, as discussed above, that the device for improved hearing comprises an electronics module 34 (see Leysieffer '674 Figs. 1-7, column 14, lines 8-67 and column 16, lines 40-55). It is inherent, or at least obvious to one having ordinary skill in the art that the electronics within the module 34 are disposed within and attached to an electronics module housing, preferably hermetically sealed for biocompatibility purposes.

19. As to Claims 30 and 32, Leysieffer '674 discloses an embodiment of the device for improving hearing (see Leysieffer '674 Fig. 7) where the microphone 20, the power supply/battery 25 and electronics 62 are disposed within a combined housing and where the at least one electrical transducer 11 and the at least one mechanical transducer 14 are located external to the combined housing (see Leysieffer '674 column 16, lines 40-55). It is inherent, or at least obvious to one having ordinary skill in the art that the elements be attached to the housing in some manner well known in the art (i.e. soldering, welding, IC boards etc.) otherwise the elements would be unstable and free to move around and collide with each other compromising the workability of the device. The Examiner notes that a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

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In the instant case, the combined housing disclosed by Leysieffer '674 is "suitable" for surgical implantation in a subject's mastoid bone.

Claim Rejections - 35 USC § 103

20. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

21. Claims 12, 17-18, 31 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leysieffer '674. As to Claim 12, Leysieffer '674 discloses that the microphone 20 is disposed within a housing and that at least one lead extends from the microphone 20 to a position outside the microphone housing via a lead-through wire connector (see Leysieffer '674 column 13, lines 30-50). It is inherent, or at least obvious to one having ordinary skill in the art that the microphone 20 be attached to the housing in some manner well known in the art (i.e. soldering, welding, gluing etc.) otherwise the microphone 20 would be unstable and free to move around and such movement(s) may provide distortion of sound pickup and addition of noise in the signal compromising the performance of the device. Leysieffer '674 discloses the claimed invention as discussed above except that it is not specified that the at least one lead extending from the microphone to a position outside the housing include more than one lead. It would have been obvious to one having ordinary skill in the art at the time the invention was made to include more than one lead, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art.

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22. As to Claims 17-18, Leysieffer '674 further discloses an external charge unit 22 (see Leysieffer '674 Fig. 1). Leysieffer '674 discloses the claimed invention as discussed above except for the indicator for detecting the charge state of the battery. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device as taught by Leysieffer '674 with a status indicator since it was known in the art that such status indicators are used to provide a means for letting a user know if the implanted battery actually needs to be recharged or not by an external charge unit.

23. As to Claim 31, Leysieffer '674 discloses the claimed invention as discussed above except that it is not specified that the combined housing be selected from the group consisting of a ceramic housing and a titanium housing. It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the combined housing from either a ceramic housing or a titanium housing, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice.

24. As to Claim 33, Leysieffer '674 discloses the claimed invention as discussed above except that it is not specified that the mechanical transducer 14 have a resonant frequency between 250 and 10,000 hertz. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device as taught by Leysieffer '674 with a mechanical transducer having a resonant frequency between 250 and 10,000 hertz since it was known in the art that such frequency range is included in the general audio frequency range of 20 Hz to 20 kHz normally audible to humans.

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25. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Leysieffer '674 in view of Miller (U.S. 6,620,094). Applicant differs from Leysieffer '674 in that the microphone is selected from the group consisting of an omnidirectional microphone and a bidirectional microphone. The Examiner considers the use of omnidirectional microphones in partially implantable and/or fully implantable devices for improving hearing in a subject to be conventional and well known in the art with Miller being but one example (see Miller Figs. 3a and 4, column 5, lines 45-56 and column 7, lines 57-65).

26. Claims 1-5 and 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leysieffer '674 in view of Ball et al. (U.S. 6,190,305) (herein Ball). As to Claims 1-5 and 8, the Examiner makes reference to Leysieffer '674 Fig. 7 where Leysieffer '674 discloses a device for improving hearing in subject comprising an electromechanical transducer 14, an intracochlear stimulation electrode array 10 having several stimulation electrodes 11, and an electronics module, read as a receiver 34. Leysieffer '674 further discloses in the embodiment depicted in Fig. 7, a lead or equivalent conductor as a means for conducting current between the receiver 34 and the electromechanical transducer 14 and another lead or equivalent conductor as a means for conducting current between the receiver 34 and the electrodes 11 of the intracochlear stimulation electrode array 10 (see Leysieffer '674 Fig. 7 and column 16, lines 41-55). Leysieffer '674 discloses the claimed invention as discussed above except the electromechanical transducer 14 is not specified to be a floating mass transducer comprising a magnet and a coil disposed within and attached to a housing, where the magnet produces a first magnetic field and the coil produces a second magnetic field and the interaction of the two fields causes vibrations of the housing.

Ball, however, discloses a floating mass transducer 100 that may be mountable on any vibratory structure of the ear (such as the tympanic membrane of the temporal bone, the bones of the ossicular chain or the round window) for improving hearing in an impaired person. Ball discloses that the floating mass transducer 100 comprises a magnet 42 and a coil 14 disposed within and attached to a housing 10 where the magnet 42 produces a first magnetic field and the coil 14 produces a second magnetic field and the interaction of the two fields causes vibrations of the housing 10 (see Ball Abstract, column 1, lines 52-58, column 7, lines 25-67, column 8, lines 1-67, column 9, lines 1-11 and column 10, lines 1-14). Ball further discloses that the floating mass transducer 100 is an improvement over prior art electromagnetic transducers in that vibrations in the cochlea are produced that have sufficient force to stimulate hearing perception with minimal distortion (see Ball column 2, lines 26-60). In addition, Leysieffer '674 expressly discloses at column 6, lines 4-9, that the electromechanical transducer 14 may operate "according to any known electromechanical transducer principal, and can be designed especially as an electromagnetic, electrodynamic, piezoelectric, magnetostrictive or dielectric (capacitive) transducer". Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the electromechanical transducer of Leysieffer '674 in view of Ball to be a floating mass transducer comprising a magnet and a coil disposed within and attached to a housing, where the magnet produces a first magnetic field and the coil produces a second magnetic field and the interaction of the two fields causes vibrations of the housing in order to provide vibrations in the cochlea that have sufficient force to stimulate hearing perception with minimal distortion.

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27. As to Claim 9, Leysieffer '674 discloses that the receiver 34 is configured for implantation within a subject's mastoid bone (see Leysieffer Fig. 7).

28. As to Claim 10, Leysieffer '674 discloses that the device for improving hearing further comprises an external part, read as an audio processor 64 comprising a microphone 20, a signal processor, read as a circuit 62, a power supply/battery 25 and a modulator/transmitter unit 63 (see Leysieffer '674 Fig. 7 and column 16, lines 41-55). It is inherent, or at least obvious to one having ordinary skill in the art that these elements be attached to the housing in some manner well known in the art (i.e. soldering, welding, IC boards etc.) otherwise the elements would be unstable and free to move around and collide with each other compromising the workability of the device.

29. Claims 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leysieffer '674 in view of Ball as applied to claims 1 above, and further in view of Crosby et al. (U.S. 4,532,930) (herein Crosby). The previously modified Leysieffer '674 reference discloses the claimed invention as discussed above except that it is not specified that any of the electrodes 11 on the carrier 12 of the intracochlear stimulation electrode array 10 are configured for attachment to a subject's round window or to an outer surface of a subject's round window.

Crosby, however, discloses a cochlear implant system including an electrode array 1 comprising multiple platinum ring electrodes in a silastic carrier to be implanted in the cochlear of the ear (see Crosby Abstract and Fig. 2). Crosby, further teaches that it is well known for such intracochlear electrode arrays to be inserted through a subjects round window (see Crosby column 14, lines 43-60) and that electrodes further from the round window in the tonotopioc arrangement of the electrodes spaced along the basilar membrane will elicit the lowest frequency

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response and that electrodes closest to the round window will elicit the highest frequency response (see Crosby column 47, lines 26-45). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the electrode array of Leysieffer '674 in view of Ball and Crosby to be inserted to a depth of the cochlea of a patient where at least one electrode is configured for attachment to a subject's round window or to an outer surface of a subject's round window in order for very high frequencies to be perceived by the patient.

Conclusion

30. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure.

Leysieffer (U.S. 6,629,923) (herein Leysieffer '923) discloses an actoric output arrangement for direct mechanical stimulation of a lymphatic inner ear space, wherein the actoric output arrangement has an intracochlear electromechanical transducer.

Leysieffer et al. (U.S. 6,565,503) (herein Leysieffer '503) discloses an output-side actuator stimulation arrangement, the actuator stimulation arrangement has a dual intracochlear arrangement in combination with a stimulator arrangement with at least one stimulator element for at least indirect mechanical stimulation of a damaged inner ear and one electrically acting stimulation electrode arrangement with at least one cochlear implant electrode for electrical stimulation of the inner ear.

Stöckert et al. (U.S. 6,592,512) (herein Stöckert) discloses an at least partially implantable hearing system for rehabilitation of a hearing disorder, comprising: at least one acoustic sensor for picking up an acoustic signal and converting it into an electrical audio sensor


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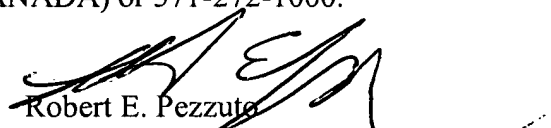
signal, an electronic signal processing unit for audio signal processing and amplification, an electrical power supply unit which supplies individual components of the system with energy, and at least one electromechanical output transducer driven by the electronic driver arrangement and having a mechanical output impedance, where the transducer is provided with an active electromechanical element and an output member for stimulating, via a passive coupling element, an ossicle of a middle ear ossicular chain.

31. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Jessica L. Reidel whose telephone number is (571) 272-2129. The Examiner can normally be reached on Mon-Thurs 8:00-5:30, every other Fri 8:00-4:30.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Robert Pezzuto can be reached on (571) 272-6996. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Jessica L. Reidel
Examiner
Art Unit 3766


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